




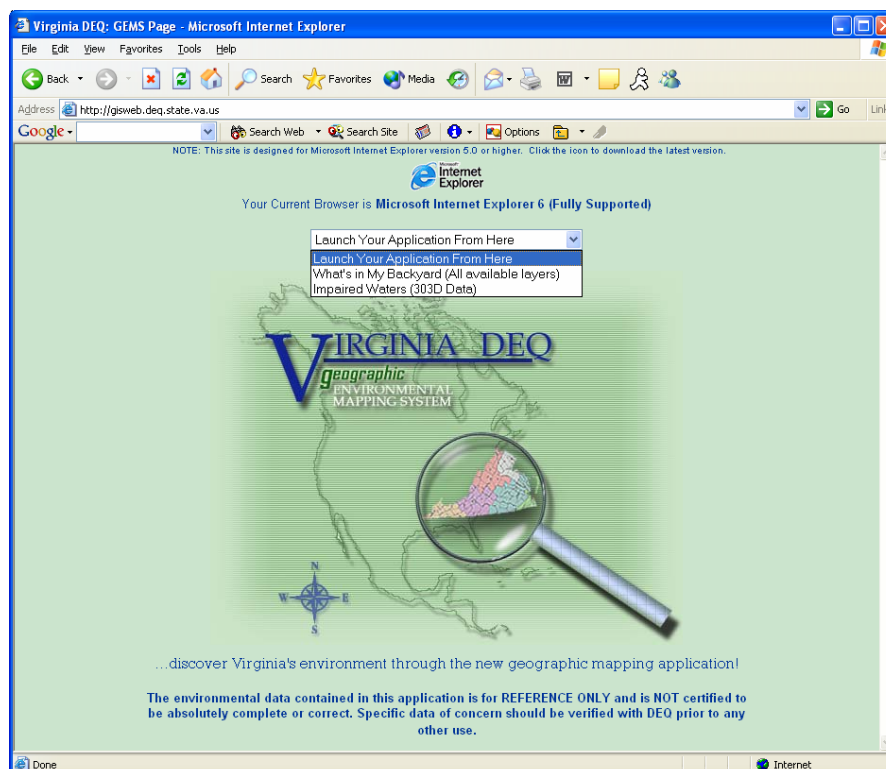
# How to Use Virginia's Geographic Environmental Mapping System



Virginia has a new, powerful system that allows citizens to view water quality data using an online mapping system. To help citizens learn how to use this system a step by step example is provided in this handout. In this example, a citizen living in Roanoke City is looking up information on Tinker Creek. Using the same methods found in this example, everyone can review the water quality data in streams throughout Virginia.

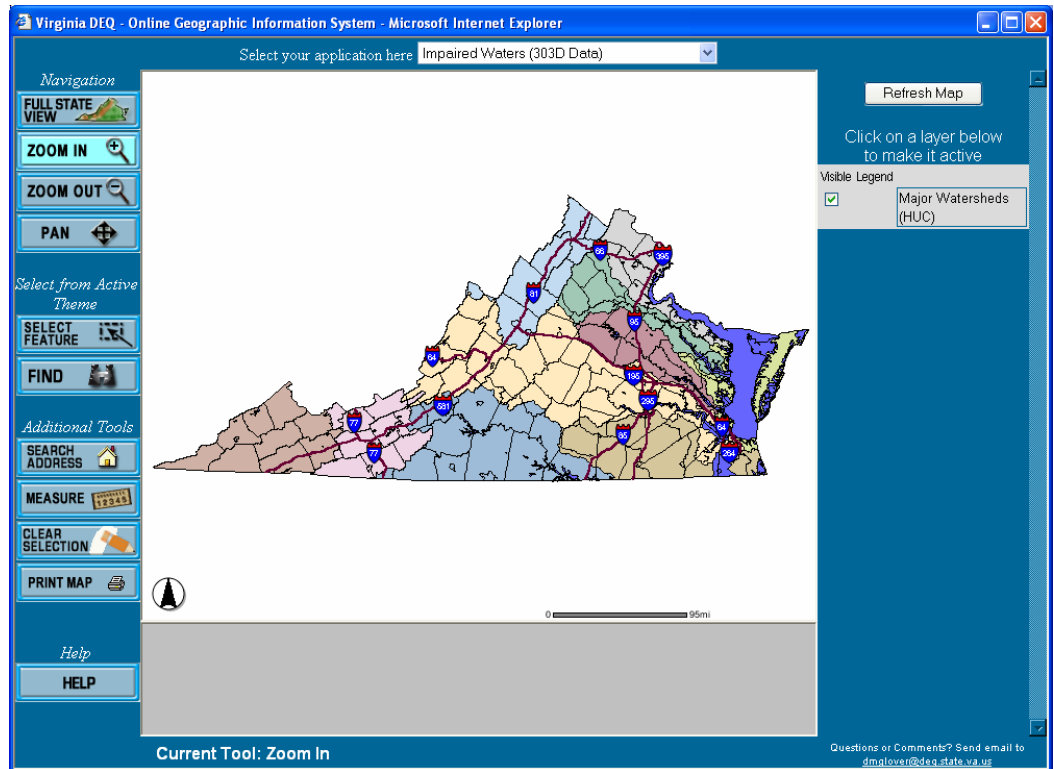
- (1) Go to the DEQ Home Page: <http://www.deq.state.va.us>.
- (2) Click on the words 'Waters Programs' (lower left) panel by scrolling down. Then click on "Impaired Waters Report (mid right panel).
- (3) Then click on the graphic  or the darkened words in the green box.

The screen below will appear.



(4) Select the Impaired Waters item from the drop down menu and the screen below will appear.

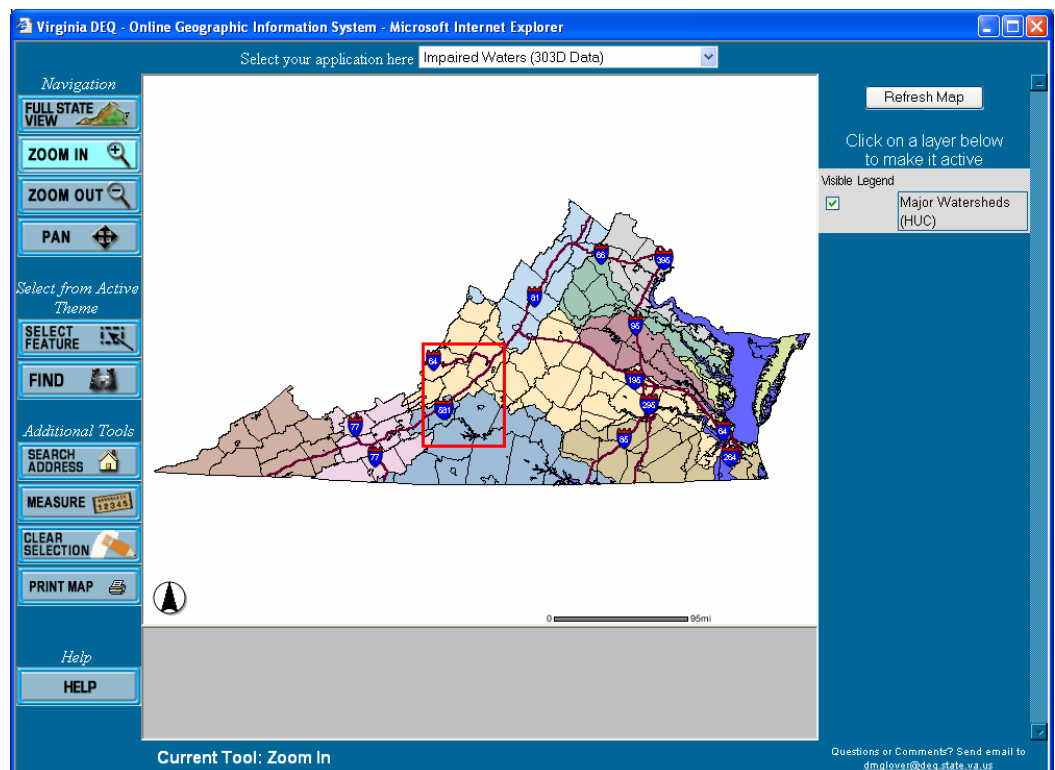
The 'ZOOM IN' button is selected upon entry to the site (default) active navigational tool. Take a moment to look at the panel on the left. These navigational and selection tools are available to you during your mapping session. Each tool must be selected (highlighted-light blue) before it will function



The further you zoom in the more layers of information are available for viewing. All layers available at the current scale are listed in the right panel, along with the symbology for each layer.

The Tinker Creek watershed is used in this example. Tinker Creek is located in Botetourt and Roanoke Counties. Roanoke County is the northern most county of the counties highlighted in blue (Roanoke Basin drainage).

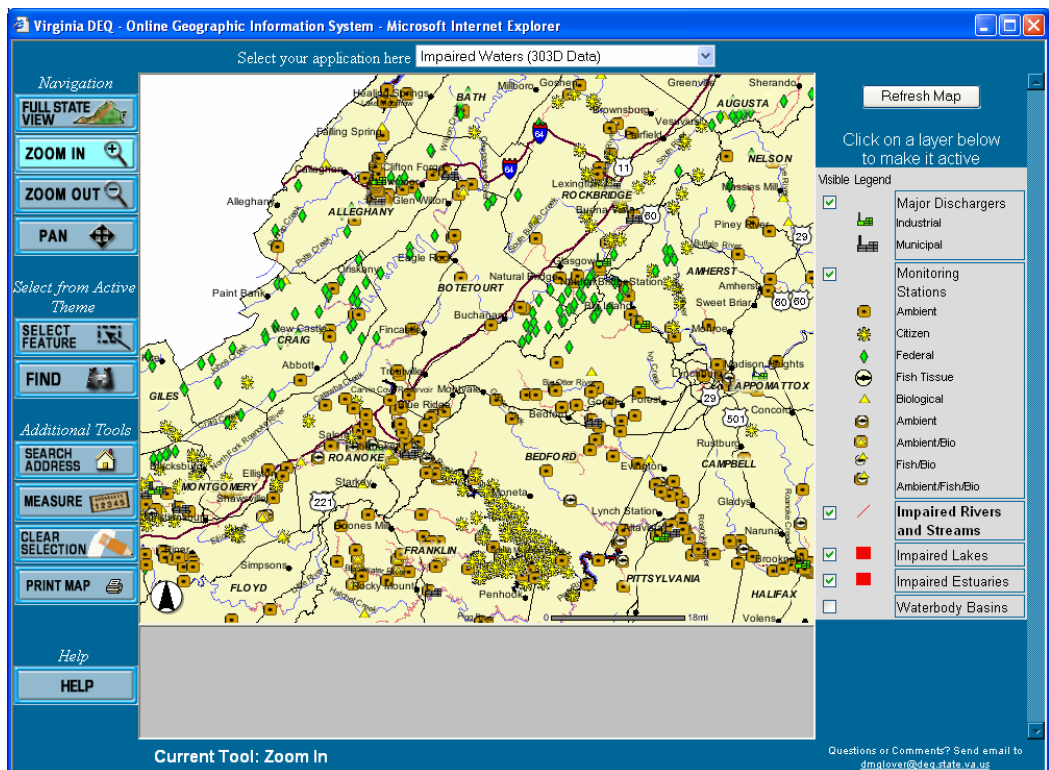
(5) Zoom to the area of interest, in this case the Botetourt/Roanoke County area, as shown below by holding down the left mouse button and drawing a box over the point of interest. Continue to zoom in until you reach the stream of interest. Please be patient as the map redraws with each navigational action.



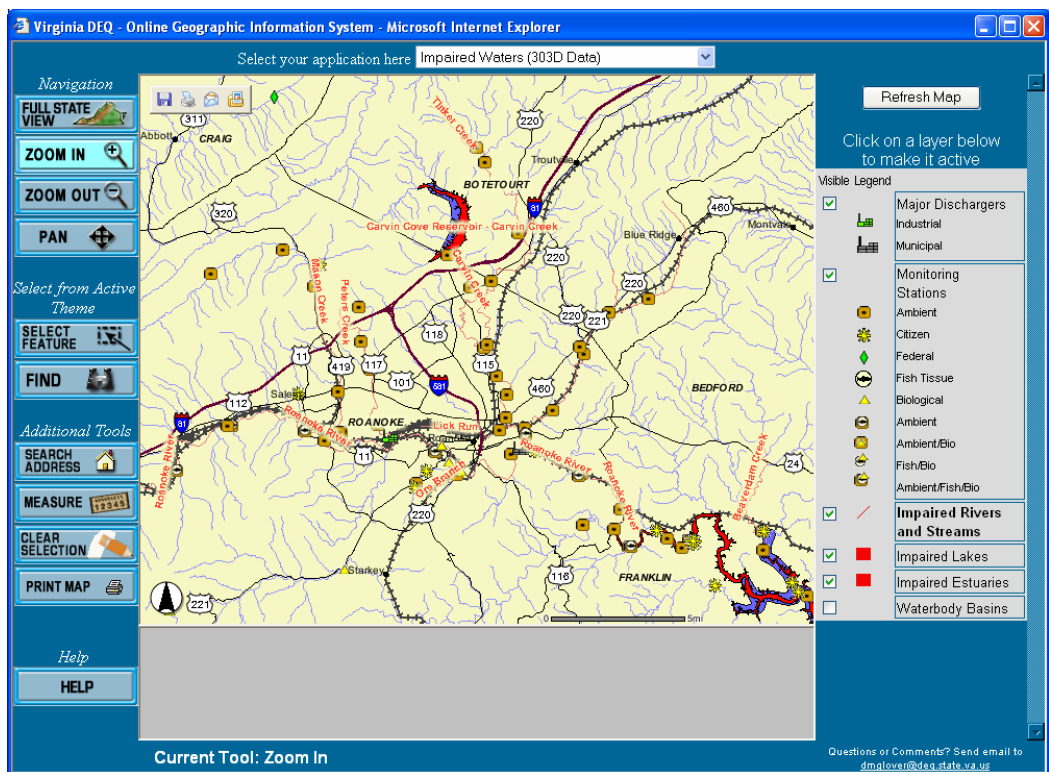
(6) In this example, we have zoomed into the Tinker Creek watershed (next page). Notice there are six 'Layers that can be made Active'. The Impaired Rivers and Streams layer is default active layer. Notice that the layer name is in bold text.

*To make a layer Visible:* Turn on (display) a layer place a check mark (click in) in the square box ✓ or turn off a layer remove the check mark by clicking in the square box.

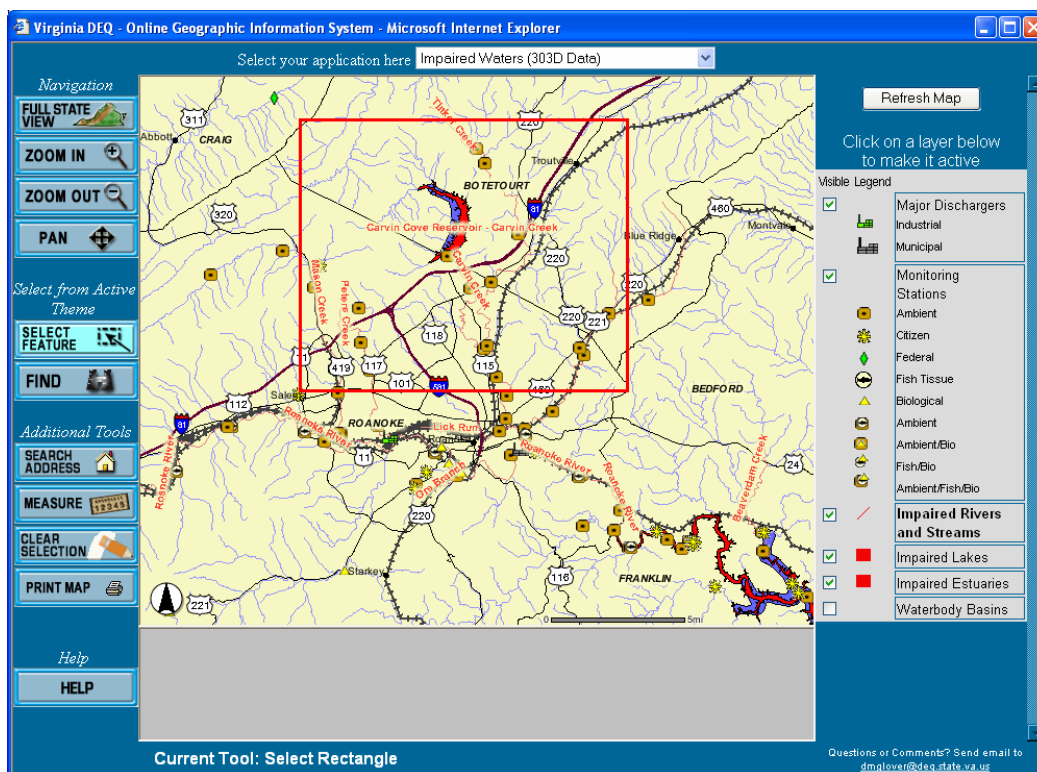
*To make a layer Active:* Click on the layer. The layer



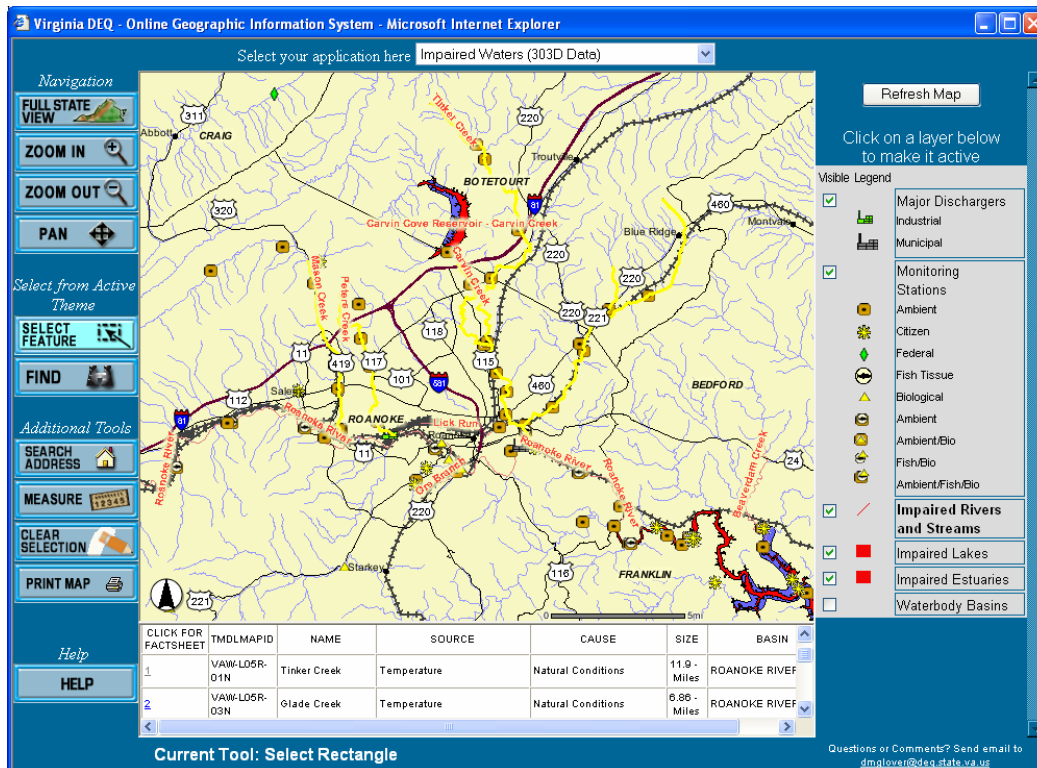
(7) As you zoom in a little further, the names of the impaired waters will appear on the map. To view the impaired segments in the Tinker Creek shed click on the 'select rectangle'.



(8) Next, holding the left mouse button drag a box over the Tinker Creek watershed. This will select all of the impaired streams in the watershed.



(9) To view the fact sheet for the impaired water of interest, scroll through the bottom box until you find the stream of interest. In this example, we clicked on the number 1, which will bring up a fact sheet on Tinker Creek.





(9 cont'd) Read the fact sheet or print out a copy then close the window to review another fact sheet in the watershed.

303d FactSheet - Microsoft Internet Explorer

Address: <http://gisweb.deq.state.va.us/deqms/factsheet.cfm?tmidid=VAW-L05R-01N>

**DEQ**  
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

### 2002 303(D) Impaired Waters Fact Sheet

**Part: 1C**

RIVER BASIN:	ROANOKE RIVER BASIN
CITY/COUNTY:	Botetourt, Roanoke, Roanoke, City of
STREAM NAME:	Tinker Creek
HYDROLOGIC UNIT:	03010101
SEGMENT SIZE:	11.9 - Miles
INITIAL LISTING:	1998
TMDL SCHEDULE:	- 2010
SEGMENT ID(s):	VAW-L05R
UPSTREAM LIMIT:	
DESCRIPTION:	Near Rt. 11 Bridge near Cloverdale.
RIVER MILE:	11.90
LATITUDE:	372223
LONGITUDE:	795417
DOWNSTREAM LIMIT:	
DESCRIPTION:	Tinker Cr. mouth on the Roanoke R.
RIVER MILE:	0.00
LATITUDE:	371559
LONGITUDE:	795416

**LOCATION INFORMATION:** The segment begins near the Rt. 11 bridge in Cloverdale and extends downstream to the mouth of Tinker Creek on the Roanoke River. The entire segment is on the Roanoke River.

(10) To review the water quality monitoring data in the watershed, change the active layer to monitoring stations and click on the 'Refresh Map' button.

Virginia DEQ - Online Geographic Information System - Microsoft Internet Explorer

Select your application here: Impaired Waters (303D Data)

Navigation: FULL STATE VIEW, ZOOM IN, ZOOM OUT, PAN, Select from Active Theme, SELECT FEATURE, FIND, Additional Tools: SEARCH ADDRESS, MEASURE, CLEAR SELECTION, PRINT MAP, Help, HELP

Map showing monitoring stations and impaired waters in the Roanoke River watershed. Major features include Garvin Cove Reservoir, Botetourt, Roanoke, Bedford, and the Roanoke River. Monitoring stations are marked with yellow icons.

Visible Legend:

- Major Dischargers: Industrial, Municipal
- Monitoring Stations: Ambient, Citizen, Federal, Fish Tissue, Biological, Ambient/Bio, Fish/Bio, Ambient/Fish/Bio
- Impaired Rivers and Streams
- Impaired Lakes
- Impaired Estuaries
- Waterbody Basins

Refresh Map

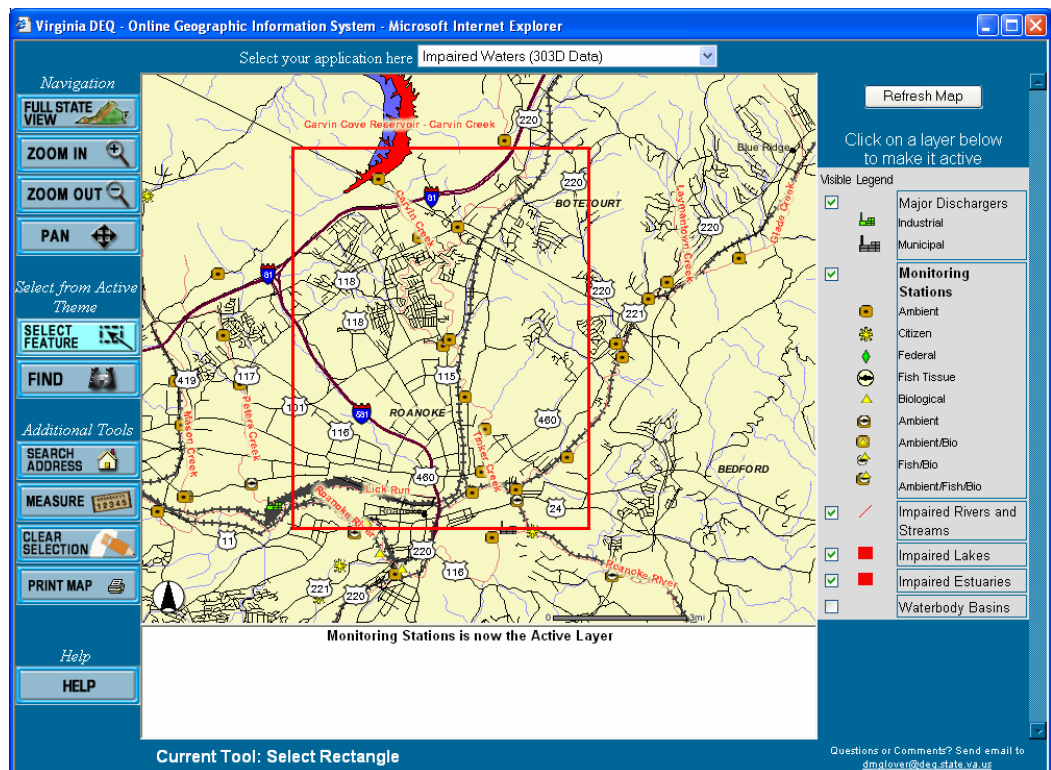
Click on a layer below to make it active

Monitoring Stations is now the Active Layer

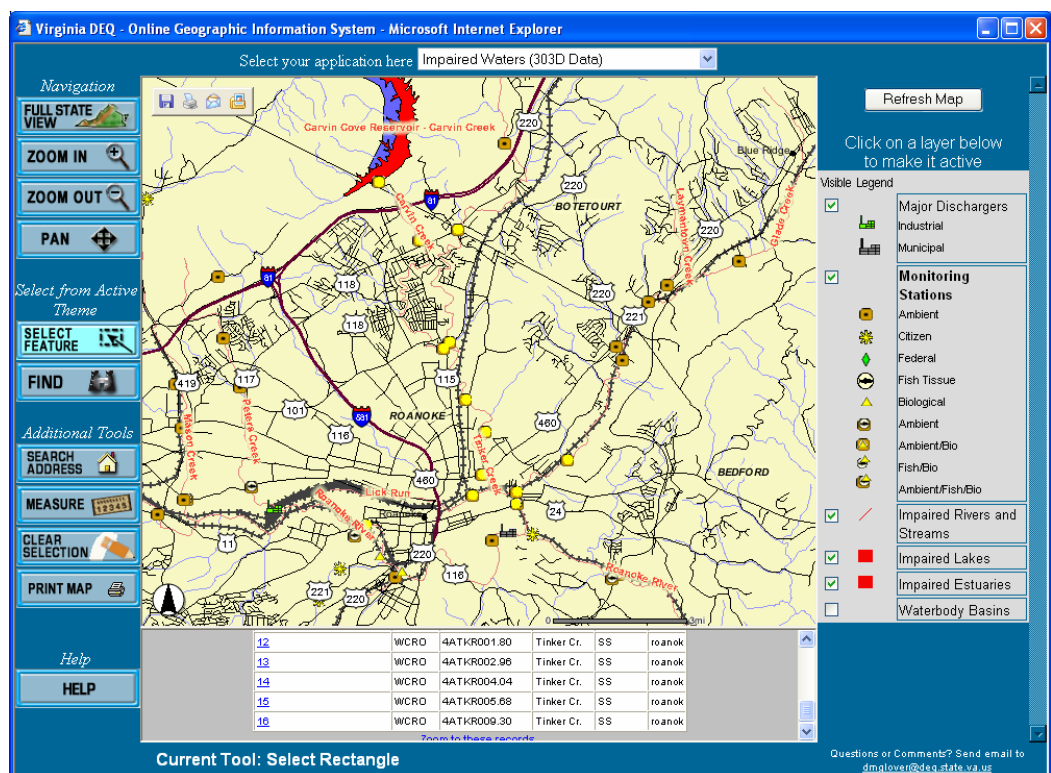
Current Tool: Select Rectangle

Questions or Comments? Send email to [dmolows@deq.state.va.us](mailto:dmolows@deq.state.va.us)

Next, holding the left mouse button drag a box over the Tinker Creek watershed. This will select all of the monitoring stations in the selection box.



(11) To view the water quality information from each station, scroll through the bottom box until you find the station of interest. In this example, we clicked on the number 16, displaying the monitoring station on river mile 9.30 of Tinker Creek.



(12) To review the water quality data, scroll down to 'Chemical Parameters' box and click on the 'Click here' hyperlink.

The screenshot shows the 'Station' detail page for station 4ATKR009.30. The page includes a header with the DEQ logo and navigation links. Below the header, there is a table with the following information:

Stations ID:	4ATKR009.30	
Location:	RT. 11 BRIDGE AT HOLLINS	
County/City:	ROANOKE COUNTY	
State:	VIRGINIA	
Region:	WCRO	Description: West Central Regional Office
Latitude:	37° 21' 21"	
Longitude:	-79° 55' 46"	
Stream Name:	TINKER CREEK	
Level 1 Code:	STREAM	Description: Station sample at stream (freshwater, freeflow, surface water)
Level 2 Code:	AMBNT	Description: Monitor ambient conditions of environment
Level 3 Code:	AWTSHD	Description: Ambient Watershed Station

(13) To view the water quality information for 'Tinker Creek', scroll down to the Fecal Coliform box and click on the 'Click here' hyperlink to see the results.

The screenshot shows the 'Chemical Parameters Monitored at a specific Station' page for station 4ATKR009.30. The page includes a header with the DEQ logo and navigation links. Below the header, there is a table with the following information:

Chemical Results	Parameter Code	Parameter Name	Sampling Count
<a href="#">Click here</a>	00005	X-SEC. LOC., VERTICAL (% OF TOTAL DEPTH)	61
<a href="#">Click here</a>	00076	Turbidity, Hach Turbidimeter (Formazin Turb Unit)	9
<a href="#">Click here</a>	00095	Conductivity	12
<a href="#">Click here</a>	00500	TOTAL SOLIDS, (MGL)	12
<a href="#">Click here</a>	00505	VOLATILE SOLIDS (MGL)	12
<a href="#">Click here</a>	00510	FIXED SOLIDS (MGL)	12
<a href="#">Click here</a>	00530	TOTAL SUSPENDED SOLIDS (MGL)	14
<a href="#">Click here</a>	00535	VOLATILE SUSPENDED SOLIDS (MGL)	12
<a href="#">Click here</a>	00540	FIXED SUSPENDED SOLIDS (MGL)	12
<a href="#">Click here</a>	00600	NITROGEN, TOTAL (MGL AS N)	2
<a href="#">Click here</a>	00610	AMMONIA, TOTAL (MGL AS N)	86
<a href="#">Click here</a>	00615	NITRITE, TOTAL (MGL AS N)	94

(14) Fecal Coliform test results are found under the 'Value' column. Samples that exceed 400 cfu/100 ml violate the Commonwealth's water quality instantaneous standard.

Virginia DEQ: Chemical Results - Microsoft Internet Explorer

Address: [https://www.deq.state.va.us/webapp/wqm\\_station.get\\_ana\\_by\\_sta\\_storet\\_parm?p\\_sta\\_id=4ATKR009.30&p\\_storet\\_code=31616](https://www.deq.state.va.us/webapp/wqm_station.get_ana_by_sta_storet_parm?p_sta_id=4ATKR009.30&p_storet_code=31616)

Virginia DEQ Home | Search | Site Index | Contact Us | Help

**DEQ** Water Quality Monitoring  
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Information Center | Environmental Programs | Laws & Regulations | Permits | Links  
[Search Monitoring Stations by County/City](#) | [Search Monitoring Stations by Stream](#)  
[Special Study Programs](#) | [STORET Parameters](#)

For retrieving significant amount of data, please e-mail: [Roger.Stewart](mailto:Roger.Stewart@deq.state.va.us)

**Chemical Results**

STORET Parameter Code: 31616 - FECAL COLIFORM (MFM-FCBR/100 ML) MEMBRAN  
 Station: 4ATKR009.30

Date Time	Depth Meter	Depth Description	Container ID	Value	Lab Replicate #	Remark	CAS Number
06/04/2002 11:30	.3	Surface sample in meters	3	300	1		
04/24/2002 14:30	.3	Surface sample in meters	3	100	1		
02/06/2002 11:30	.3	Surface sample in meters	3	100	1	Material Analyzed for, but not detected. Value stored is the limit of detection.	
						Material Analyzed	